

**Quiz Date: 23<sup>rd</sup> April 2020**

**Directions (1-5):** What approximate value should come in the place of question (?) mark :

Q1.  $\left[ (511.9)^{\frac{1}{3}} + (728.89)^{\frac{1}{3}} \right] = \sqrt{(?)^2 + 24.991} + 3.845$

- (a) 10
- (b) 8
- (c) 16
- (d) 12
- (e) 20

Q2.  $\frac{?-4.981}{14.99-?} \times 39.9\% \text{ of } 649 = 65$

- (a) 10
- (b) 12
- (c) 15
- (d) 7
- (e) 18

Q3.  $\frac{19.9\% \text{ of } 624}{29.9\% \text{ of } 570} \times 342.11 = ?^2 - 12.89 \times 2.91$

- (a) 11
- (b) 17
- (c) 13
- (d) 15
- (e) 19

Q4.  $\left[ (3375.02)^{\frac{1}{3}} + (2197.03)^{\frac{1}{3}} + ? \right]^2 = 331.11 + 630.021$

- (a) 12
- (b) 3
- (c) 8
- (d) 15
- (e) 18

Q5.  $24.95\% \text{ of } 960.02 + 336.11 + 117.21 = ?^2 + 12.91 \times 8.91$

- (a) 22
- (b) 25
- (c) 28
- (d) 26
- (e) 24

**Directions (6-10):** In the following questions two statements (Quantity 1 and Quantity 2) are given. You have to find both the quantities and give answer (Compare only numerical value, ignore units)

**Q6. Quantity 1: Time taken by the first cook to make 80 burgers alone for a marriage party,** The next day three cooks have to make 80 burgers. They are known to make 20 pieces every minute working together. The first cook began working alone and made 20 pieces having worked more than three minutes. The remaining part of the work was done by the second and the third cook working together. It took a total of 8 minutes to complete the 80 burgers.

**Quantity 2: Time taken by all the four inlets to fill up the Bhakhda Nangal dam.** The dam has four inlets. Through the first three inlets, the dam can be filled in 12 minutes; through the second, the third and the fourth inlet it can be filled in 15 minutes; and through the first and the fourth inlet it can be filled in 20 minutes.

- (a) If quantity 1 < quantity 2
- (b) If quantity 1 > quantity 2
- (c) If quantity 1 = quantity 2 or No relation between quantity 1 and quantity 2
- (d) If quantity 1 ≤ quantity 2
- (e) If quantity 1 ≥ quantity 2

**Q7. Quantity 1: Amount invested in each scheme.** This amount is invested in scheme A for 6 years which offers simple interest at the rate of  $x\%$  per annum. The same amount is invested in scheme B for 2 years which offers compound interest (compound annually) at the rate of  $10\%$  per annum. Interest earned from scheme A is twice to that of earned from scheme B. If the rate of interest of scheme A had been  $(x + 2)\%$  per annum, the difference between the interest of scheme A and B after corresponding periods would have been Rs 3960.

**Quantity 2: Amount lent by the person.** He lent out the same amount at  $6\%$  and  $24\%$  per annum simple interest each for a period of 18 months. He got total interest of Rs 4704.

- (a) If quantity 1 < quantity 2
- (b) If quantity 1 > quantity 2
- (c) If quantity 1 = quantity 2 or No relation between quantity 1 and quantity 2
- (d) If quantity 1 ≤ quantity 2
- (e) If quantity 1 ≥ quantity 2



**Q8. Quantity 1: Time taken by C to complete the work alone.** A and B together can do a piece of work in 16 days and B and C can do the same work in 24 days. From starting A and B worked for 4 days and 7 days respectively and remaining work is completed by C in 23 days.

**Quantity 2: Final quantity of milk left in the jar.** The jar has 60 litres of milk. From the jar, 12 litres of milk was taken out and replaced by an equal amount of water. Again, 12 litres of the newly formed mixture is taken out of the jar.

- (a) If quantity 1 < quantity 2
- (b) If quantity 1 > quantity 2
- (c) If quantity 1 = quantity 2 or No relation between quantity 1 and quantity 2
- (d) If quantity 1 ≤ quantity 2
- (e) If quantity 1 ≥ quantity 2

**Q9. Quantity I: Time taken by A to complete a work.** B and C together can complete the work in 8 days. The ratio of working efficiency of A and B is 2 : 3 and that of B and C is 4 : 5.

**Quantity II:  $X^3 = 17,576$**

- (a) If quantity I > Quantity II
- (b) If quantity I < Quantity II
- (c) If quantity I ≥ Quantity II
- (d) If quantity I ≤ Quantity II
- (e) if quantity I = Quantity II or no relation between quantity I and II.

**Q10. Quantity I: Percentage profit earned by selling a mixture of two type of rice.** 40 kg of first type having CP of Rs 24.5 per kg is mixed with 35 kg of second type rice having CP of Rs 24 per kg. This mixture is sold at Rs 30 per kg

**Quantity II: minimum time (in minute)** after which three friends P, Q, R meet together of first time. They start running around a circular track together and individually can complete one loop in 24, 32 and 40 min. respectively.

- (a) If quantity I > Quantity II
- (b) If quantity I < Quantity II
- (c) If quantity I ≥ Quantity II
- (d) If quantity I ≤ Quantity II
- (e) if quantity I = Quantity II or no relation between quantity I and II.

**Directions (11-15): What will come in place of question mark (?) in the following no. series?**

Q11. 3, 9, 31, 129, 651, ?

- (a) 3915
- (b) 3913
- (c) 3911
- (d) 3261
- (e) 4565

Q12. 480, 480, 960, 320, 1280, ?

- (a) 800
- (b) 6400
- (c) 256
- (d) 128

(e) 32

Q13. 10, 22, 58, 118, 202, ?

(a) 310

(b) 442

(c) 320

(d) 394

(e) 334

Q14. 48, 24.5, 25.5, 53, 216, ?

(a) 432

(b) 868

(c) 1736

(d) 2170

(e) 3472

Q15. 110, 133, 165, 222, 328, ?

(a) 515

(b) 510

(c) 565

(d) 596

(e) 409



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**Solutions**

S1. Ans.(d)

Sol.

$$\left[ (512)^{\frac{1}{3}} + (729)^{\frac{1}{3}} \right] \approx \sqrt{?^2 + 25} + 4$$

$$8 + 9 - 4 = \sqrt{?^2 + 25}$$

$$13 = \sqrt{?^2 + 25}$$

$$?^2 + 25 = 169$$

$$?^2 = 144$$

$$? = 12$$

S2. Ans.(d)

Sol.

$$\frac{?-5}{15-?} \times \frac{40}{100} \times 650 \approx 65$$

$$\frac{?-5}{15-?} \times 260 = 65$$

$$\frac{?-5}{15-?} = \frac{65}{260}$$

$$\frac{?-5}{15-?} = \frac{1}{4}$$

$$4 \times ? - 20 = 15 - ?$$

$$4 \times ? + ? = 35$$

$$5 \times ? = 35$$

$$? = 7$$

S3. Ans.(b)

Sol.

$$\frac{20}{100} \times 625$$

$$\frac{30}{100} \times 342 \approx ?^2 - 13 \times 3$$

$$\frac{125}{171} \times 570$$

$$\frac{171}{250 + 39} = ?^2 - 39$$

$$250 + 39 = ?^2$$

$$?^2 = 289$$

$$? = 17$$

S4. Ans.(b)

Sol.

$$\left[ (3375)^{\frac{1}{3}} + (2197)^{\frac{1}{3}} + ? \right]^2 \approx 331 + 630$$

$$[15 + 13 + ?]^2 = 961$$

$$28 + ? \approx 31$$

$$? = 3$$

S5. Ans.(e)

Sol.

$$\frac{25}{100} \times 960 + 336 + 117 \approx ?^2 + 13 \times 9$$

$$240 + 336 + 117 = ?^2 + 117$$

$$?^2 = 576$$

$$? = 24$$

S6. Ans. (b)

Sol.

Quantity 1: Time taken by all the three cooks to make 80 burgers

$$= \frac{80}{20} = 4 \text{ minutes}$$

Let first cook worked for  $(3 + x)$  minutes

2<sup>nd</sup> and 3<sup>rd</sup> cooks worked for  $(8 - 3 - x)$

$= (5 - x)$  min

$$\therefore \frac{1}{4(3+x)} + \frac{3}{4(5-x)} = \frac{1}{4}$$

$$\Rightarrow 5 - x + 9 + 3x = (3+x)(5-x)$$

$$= 15 + 2x - x^2 = 15 + 2x$$

$$\Rightarrow x^2 - 1 = 0$$

$$\Rightarrow x = 1$$

$\therefore$  first cook makes 20 burgers in 4 minutes

$$\therefore 80 \text{ burgers} \rightarrow \frac{4 \times 80}{20}$$

$\rightarrow 16$  minutes

Quantity 2: Let Time taken by each inlet individually to fill the dam are P, Q, R and S min respectively.

One minute's work of first three inlets together =  $\frac{1}{12}$

$$\Rightarrow \frac{1}{P} + \frac{1}{Q} + \frac{1}{R} = \frac{1}{12} \quad \dots (i)$$

$$\text{and } \frac{1}{Q} + \frac{1}{R} + \frac{1}{S} = \frac{1}{15} \quad \dots (ii)$$

$$\text{and } \frac{1}{P} + \frac{1}{S} = \frac{1}{20} \quad \dots (iii)$$

Solving equations (i), (ii) and (iii) we get

$$\frac{1}{P} = \frac{1}{30} \text{ and } \frac{1}{S} = \frac{1}{60}$$

From (i), adding  $\frac{1}{S}$  in both sides of eq. (i)

$$\frac{1}{P} + \frac{1}{Q} + \frac{1}{R} + \frac{1}{S} = \frac{1}{12} + \frac{1}{60} \quad \left( \because \frac{1}{S} = \frac{1}{60} \right)$$

$$\therefore \frac{1}{P} + \frac{1}{Q} + \frac{1}{R} + \frac{1}{S} = \frac{1}{10}$$

i.e. all inlets will fill the tank in 10 minutes

so, Quantity I > Quantity II

S7. Ans. (b)

Sol.

Quantity 1: Let amount invested in each scheme was Rs P.

According to first condition

$$\frac{P \times x \times 6}{100} = 2 \times P \left[ \left( 1 + \frac{10}{100} \right)^2 - 1 \right]$$

$$\Rightarrow \frac{3x}{100} = \frac{21}{100}$$

$$\Rightarrow x = 7\% \text{ per annum}$$

According to second condition

$$\frac{P \times 9 \times 6}{100} - P \left[ \left( 1 + \frac{10}{100} \right)^2 - 1 \right] = 3960$$

$$\Rightarrow \frac{54P}{100} - \frac{21P}{100} = 3960$$

$$\Rightarrow P = \frac{3960 \times 100}{33}$$

$$\Rightarrow P = \text{Rs. } 12000$$

Quantity 2: Let sum that was lent out in each case was Rs. x

ATQ,

$$\frac{x \times 6 \times 3}{2 \times 100} + \frac{x \times 24 \times 3}{2 \times 100} = 4704$$

$$\Rightarrow x \approx \text{Rs } 10453$$

So, Quantity I > Quantity II



S8. Ans. (a)

Sol.

Quantity 1: Let no. of days taken by A, B and C to complete the given work alone be a, b and c respectively.

$$\therefore \frac{1}{a} + \frac{1}{b} = \frac{1}{16} \quad \dots (i)$$

$$\frac{1}{b} + \frac{1}{c} = \frac{1}{24} \quad \dots (ii)$$

and,

$$\frac{4}{a} + \frac{7}{b} + \frac{23}{c} = 1 \quad \dots (iii)$$

Solving equation (i), (ii) and (iii) we get

C = 32 days

Quantity 2: Ratio of milk and water after 1<sup>st</sup> operation = 48 : 12 = 4 : 1

$$\text{Final quantity of milk} = (60 - 12) \times \frac{4}{5}$$

$$= 38.4 \ell$$

Therefore, Quantity I > Quantity II

S9. Ans.(a)

Sol.

Quantity I

$$\begin{aligned}\text{Efficiency of B} &= \frac{4}{9} \times \frac{1}{8} \\ &= \frac{1}{18}\end{aligned}$$

$$\begin{aligned}\text{Efficiency of A} &= \frac{2}{3} \times \frac{1}{18} \\ &= \frac{1}{27}\end{aligned}$$

i.e. A will do in 27 days

Quantity II

$$\begin{aligned}x^3 &= 17576 \\ &= \sqrt[3]{26 \times 26 \times 26} \\ &= 26\end{aligned}$$

∴ Quantity I > Quantity II

S10. Ans.(b)

Sol.

Quantity I

$$\begin{aligned}\text{Total CP} &= 24.5 \times 40 + 24 \times 35 \\ &= \text{Rs } 1820\end{aligned}$$

$$\begin{aligned}\text{Total SP} &= 30 \times 75 \\ &= 2250\end{aligned}$$

$$\therefore \text{required profit percentage} = \frac{2250 - 1820}{1820} \times 100$$

$$\approx 24\%$$

Quantity II

Time after which they meet together for first time

$$= \text{LCM of } (24, 32, 40)$$

$$= 8 \times 3 \times 4 \times 5$$

$$= 480 \text{ min}$$

Quantity I < Quantity II

S11. Ans.(b)

Sol.

Pattern is

$$\times 2 + 3, \times 3 + 4, \times 4 + 5, \times 5 + 6 \dots$$

$$\therefore ? = 651 \times 6 + 7 = 3913$$

S12. Ans.(c)

Sol.

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Pattern is

$$480 \div 1 = 480$$

$$480 \times 2 = 960$$

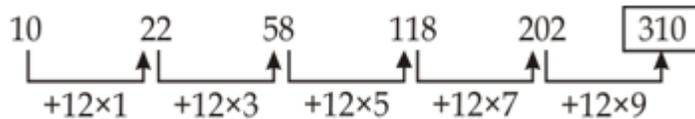
$$960 \div 3 = 320$$

$$320 \times 4 = 1280$$

$$1280 \div 5 = 256$$

S13. Ans.(a)

Sol.



S14. Ans.(c)

Sol.

Pattern is

$$48 \times 0.5 + 0.5 = 24.5$$

$$24.5 \times 1 + 1 = 25.5$$

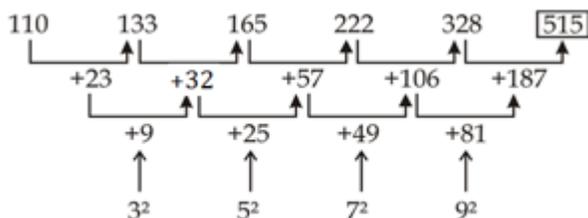
$$25.5 \times 2 + 2 = 53$$

$$53 \times 4 + 4 = 216$$

$$216 \times 8 + 8 = 1736$$

S15. Ans.(a)

Sol.



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